

Case TS/4-22995/CGC 2176

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Byron Scott Bailey Sr. et al.

Serial No. 10/582,307

Filed March 30, 2007

For MIXTURE OF DISPERSING AGENTS

Group Art Unit: 1796

Examiner: Katie L. Hammer

DECLARATION UNDER RULE 132

I, Hosuk RYU, a citizen of Republic of Korea, residing at Pilgerstrasse 61, CH-5405 Dättwil AG, Switzerland, hereby declare:

That I was awarded the degree of a PhD Chemist of the Tübingen University (Germany), in 1999;

That I have been employed by Huntsman Advanced Materials (Switzerland) GmbH, Basel, as a research chemist since 2006 and presently hold the position of a R&D manager in the Division Textile Effects;

That I have been engaged in the field of dyeing and printing auxiliaries for Huntsman Advanced Materials (Switzerland) GmbH since 2006;

That based on the above education and experience, I consider myself an expert in the field of textile processing.

I, Hosuk RYU, declare that the preparation of dispersions D1 and D2 as well as the following tests were carried out under my direction and supervision;

That I am submitting herewith the following exact report of the tests mentioned below.

Determination of Differential Pressure

The dispersions D1 (according to Example 4 of EP 474 595) and D2 (according to the invention) were prepared by mixing the following components:

D1 (prior art): 35.0 parts by weight Tinuvin 326 (benzotriazole UVA)
10.0 parts by weight sulfonated ditolylether formaldehyde condensate
1.0 parts by weight ethoxylated nonylphenol
1.0 parts by weight ethoxylated/propoxylated polypropylene glycol
53.0 parts by weight water

D2 (invention): 35.0 parts by weight Tinuvin 326 (benzotriazole UVA)
2.75 parts by weight sulfonated ditolylether formaldehyde condensate
8.25 parts by weight ethoxylated nonylphenol
1.0 parts by weight ethoxylated/propoxylated polypropylene glycol
53.0 parts by weight water

The mixtures are milled in a sand mill or bead mill until the particle size is smaller than 2.5 μm . Stable dispersions are obtained.

The performance of the above described dispersions D1 and D2 is tested regarding reduction of the differential pressure by treating a spindle of 40 g polyester yarn in a circulation dyeing apparatus, equipped with a differential pressure and flow rate measurement unit.

The test parameters are:

- pump flow: 0.5 l/min
- pump direction: inside – out
- pH: 4.3
- temperature: 50°C – 135°C with 2-4°C/ min;

The maximum differential pressure peaks observed are determined:

D1 (prior art): $\Delta P = 1050 \text{ hPa}$

D2 (invention): $\Delta P = 840 \text{ hPa}$

I, Hosuk RYU, hereby declare:

1. That based on my education and experience, I consider myself an expert in the field of textile processing;
2. That the results of the above tests show that the new dispersion D2 is superior to the closest prior art dispersion D1 with respect to the property tested;
3. That reduction of differential pressure is an important feature for the textile industry and an improvement in this property is of considerable importance;
4. That the above given measurement of differential pressure demonstrates a significant improvement in this property which is of commercial importance;
5. That the results of the tests are suprising to me and I would not have predicted such difference in the property tested.

I, Hosuk RYU, declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 Title 18 of the United States Code and that such wilful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed this 20th of October 2009

A handwritten signature in cursive script, reading "Hosuk Ryu", written in dark ink.

Hosuk RYU